BOTANICAL GAZETTE.

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Additions and Corrections to the List of Native Trees of the Lower Wabash.[1]

BY ROBERT RIDGWAY.

Page 50. For No. 8, *Prunus "Virginiana"* read *P. Americana.*

Page 53. To the list of 52 species add *Fraxinus quadrangulata* and *Carya microcarpa*, discovered subsequently on the same tract. During a second enumeration made in October, 1882, and restricted to 22 acres of the same piece of woods, 44 species were counted, notwithstanding the fact that 8 acres had been wholly deprived of the underwood and most of the larger trees, while the best timber had been culled from the whole of it. This allows two distinct species of trees for each separate acre of the entire tract. With the consent of the owner of the land, whose intention was to clear the whole piece, selected specimens of all the species were marked for preservation.

Page 57. To the "List of trees attaining a height of 100 feet or more," add, *Quercus Michauxii* (119 feet), *Carya porcina* (115 feet), and *C. microcarpa* (134 feet).

Page 62. *Acer rubrum.* A felled specimen near Wheatland measured 92 feet in length, 31 feet to first limb, and 3 feet in diameter at $3\frac{1}{2}$ feet from the ground; a standing tree in the same locality was $11\frac{1}{2}$ feet in circumference, at $1\frac{1}{2}$ feet, but at 8 feet from the ground divided into two upright forks.

Page 67. *Liquidambar Styraciflua.* Three additional felled trees of this species measured as follows:—*u.* Total length 96 feet, clear trunk 52, circumference 7; *v.* 108, $57\frac{1}{2}$, 8; *w.* 121, 70, 9. The last was felled expressly for measurement.

Page 68. The Tupelo Gum (*Nyssa uniflora*) was omitted. It is abundant in the cypress swamps of Johnson, Pulaski, and

[1] Notes on the Native Trees of the Lower Wabash and White river valleys in Illinois and Indiana. Proc. U. S. Nat. Mus., 1882, pp. 49–88.

Massac counties, Illinois (see Geological Survey of Illinois, vol. i, pp. 408, 411, 430 and 431), and very likely occurs in similar situations near the mouth of the Wabash.

Page 69. *Fraxinus Americana.* Eight slender trees of this species, recently cut for timber in the bottoms of a small creek flowing into the northern end of Monteur's pond, near Wheatland, were measured in the spring of 1883. Their dimensions were as follows:

Diameter across top of stump.	Height of stump.	Trunk to first limb.	Total length.	No. of annual rings.
2.50	3.00	65.00	108.00	Hollow in center.
2.25	2.50	59.50	106.50	145.
2.33	2.50	47.00	105.50	162.
2.25	3.00	42.00	101.00	168.
2.00	2.00	31.00	100.00	141.
2.85	2.00	62.00	111.00	139.
2.20	2.00	58.00	106.00	—
3.20	3.50	55.00	127.00	233.
Average 2.45	2.56	52.47	108.12	165.

Page 70. *Catalpa speciosa.* October 29th, 1882, a magnificent Catalpa tree attracted my attention by reason of the marked contrast between its richly green foliage and the decided brown and red tints of the adjacent tree tops. Had it not been thus conspicuous it would probably have escaped notice altogether, although standing not far from the roadside. Careful measurements were made with a tape line, with the following result:

Girth at 1 foot from ground.....18 feet.
" " 4 feet " " .....12½ "
" "10 " " " .....10 " 9 inches.
First limb, 1 foot in diameter, growing out at 14 feet from ground.
Second " " " " 30 " " "
Height (determined by several triangulations).....101½ feet.
Greatest spread of branches.....35 and 55 "

Several sprouts or "suckers" had been cut from the base for fence posts.

This tree was again visited May 31, 1883, when it was in full bloom, and clothed with its showy blossoms from the lowest branch to the extreme summit.

The locality was near Turkey Creek, about four miles south of Olney (Richland county), Illinois. A very careful search through the surrounding woods, especially in the bottoms of Turkey Creek, near by, failed to reveal a single additional specimen, of any size whatsoever—so nearly has the species been exterminated in that locality.

Page 70. *Sassafras officinale.* A very fine tree of this species which had been felled in the cypress swamp near White River,

measured 2 feet in diameter across top of stump, and 30 feet to the first limb. The top was measured to 82 feet from the base, but the smaller branches had all been destroyed. The trunk was unusually short, considering the size of the tree, and had been made into fence-posts.

Page 70. *Ulmus alata.* *Very abundant* in bottoms of streams in southern portion of Richland county, Illinois, but no large trees noticed. It grew mostly in company with the Mississippi Hackberry and the usual assemblage of bottom-land trees, the *Catalpa speciosa* having once been abundant, but now quite exterminated in some places and not common anywhere.

Page 77. *Carya alba.* A small specimen measuring only 1 foot 10 inches in diameter at 3 feet from the ground was 96 feet long and 60 feet to the first limb.

Page 77. *Carya microcarpa.* "Heavy, damp soil; scarce. Has very little loose bark, one of our smallest hickories." (SCHNECK.) A specimen growing in Gibson county, Indiana, was 134 feet high, the trunk 70 feet clear and 9 feet 10 inches in circumference at 3 feet from the ground. Another was 14 feet in girth and considerably over 100 feet high. The latter grew on the bank of Greathouse creek, in Wabash county, Illinois, near the town of Mount Carmel.

Page 78. *Carya porcina.* A specimen growing on my father's farm, near Wheatland, measured 7½ feet circumference at 3 feet from the ground, and was about 115 feet high. Another growing two or three hundred yards from the specimen of *C. microcarpa*, the measurements of which are given under the head of that species, in Gibson county, was 10½ feet in girth, the top spreading 99 feet, and the total height not far from 140 feet.

Page 78. *Quercus alba.* A remarkably fine white oak growing in the edge of the bottoms on the "Steen" tract, near Wheatland, Indiana, was not less than 130 feet high, while, by actual measurement, the top expanded 121 feet, the respective extremities elevated not less than 100 feet; the trunk measured 15 feet in circumference, at 3 feet from the ground, and was not less than 40 feet "in the clear."

A white oak tree, standing alongside the Grayville road, about five miles from Mount Carmel, measures 17½ feet in circumference, but the base was somewhat swollen.

Page 80. *Quercus coccinea.* A small tree, recently cut near the edge of Monteur's pond, two miles west of Wheatland, Indiana, was 120 feet long, 30 feet to first small limb, and 2 feet 9 inches in diameter across top of stump, at 3 feet from the ground.

Page 80. *Quercus lyrata.* The largest tree measured stood near the town of Mount Carmel (almost within the corporation), and was $8\frac{1}{2}$ feet in circumference. The height was estimated at between 90 and 100 feet.

Page 81. *Quercus macrocarpa.* A felled tree, in bottoms just above Coffee Creek (Wabash county, Illinois), measured in October, 1882, was 139 feet long, the trunk 87 feet clear, the diameter across top of stump (at $5\frac{1}{2}$ feet from ground) being 4 feet, and only 1 foot less at end of last cut!

Page 81. *Quercus Michauxii.* In the spring of 1883, I found this species very abundant, in fact, the prevailing "white" oak in certian portions of the bottom lands near Wheatland, Indiana. On a tract not exceeding 10 acres in extent, 16 trees, including apparently all of this species growing in that particular locality, were measured, with the following result. Being, with a single exception, all standing trees, it was necessary to estimate the height and length of the trunk:

Circum. at 3 ft from ground.	Length of trunk.	Height.	Spread of top.
12	40 ?	+100	81
14.50	40 ?	+100	.....
12.50	55 ?	+100	83
13	29 *	119	.....
10.50	50 ?	.....	.....
14	40 ?	+100	96
11.50	30 ?	.....	.....
12	50	.....	.....
10.75	50 ?	.....	.....
14	40 ?	.....	.....
10.50	45 ?	.....	.....
9	50 ?	.....	.....
12.75	35 ?	.....	.....
10.25	40 ?	.....	.....
10	45 ?	.....	.....
12	55 ?	.....	.....

Average, 11.83, or nearly 4 feet in diameter.

The general character and appearance of this tree are those of both *Q. Muhlenbergi* and *Q bicolor.* It is most like the former in foliage (which, however, is much more coriaceous, darker in color, and more velvety beneath), but is more like the latter in form, being one of the most robust of all the oaks, while *Q. Muhlenbergi* is decidedly the most slender of the white oak group. In the character of its bark, it is like other species, exceedingly variable, some specimens agreeing exactly in this respect with *Q. Muhlenbergi* while others could not be distinguished from *Q.*

bicolor. I have observed, however, that there is no *certain* rule by which the different species of the white oak section may be invariably distinguished from one another. It is true that each has a more or less characteristic bark in a majority of cases, but individuals of each, perfectly typical so far as fruit and foliage are concerned, are not unfrequently met with, which, if the bark were the only guide, would be unhesitatingly referred to one or another of the other species.

Page 83. *Quercus palustris*. According to Dr. Schneck (BOTANICAL GAZETTE, June, 1883, pp. 242–3), there exists, "within three miles of Mount Carmel," a tree of this species "which commences with two roots," but so close together at the surface of the ground as to appear as one. "The two bodies, however, start separately and are several inches apart for nearly 10 feet, when they unite and form a single trunk, making in all a tree nearly 70 feet high. The two trunks, where they are separate, are about 6 inches in diameter, round, straight, and appear to be solid and perfect."

Page 83. *Quercus rubra*. The largest red oak in North America is said to be in Louisiana, 18 miles from Natchitoches, on the road to Opelousas. It stands in the midst of a rich bottom, on the Bayou St. Barb. Two feet from the ground its circumference is 44 feet, and at six feet it is 32 feet around. The trunk is perfectly sound and 50 to 60 feet to the first limb. (I unfortunately neglected to record the reference to the above information).

What Bartram, in his "Travels through North and South Carolina, Georgia, East and West Florida," etc. (1791), mentions under the name "*Quercus tinctoria*" seems to be this species, rather than the black oak. His remarks are as follows: "To keep within the bounds of truth and reality in describing the magnitude and grandeur of these trees, would, I fear, fail of credibility, yet I think I can assert that many of the black oaks measured 8, 9, 10 and 11 feet in diameter, 5 feet above the ground, as we measured several that were above 30 feet girt, and from hence they ascend perfectly straight, with a slight taper, 40 or 50 feet to the limbs, but below five or six feet these trunks would measure a third more in circumference, on account of the projecting jambs or supports."

Page 83. *Quercus phellos*. In Professor Worthen's "Geology of Illinois," vol. I, p. 433, I read as follows: "North of Brooklyn, Schuyler county, I observed numerous willow oaks (*Q. phellos*), a tree which I have seen nowhere else in Illinois. Part of these woods are open, free of undergrowth, and the ground

nearly bare of grass, others have a dense undergrowth of the same trees."

Page 84. *Castanea vulgaris Americana.* In second paragraph for *March* read *May.*

Page 85. *Fagus ferruginea.* A felled tree, *with decayed top,* measured 84½ feet in length, 32½ feet to the first limb, and 2 feet 8 inches in diameter across top of stump, 3½ feet from ground.

In Southern Indiana, along the line of the Louisville & St. Louis Air Line R. R., are extensive forests where magnificent beeches are among the largest and most abundant trees. In these apparently virgin woods, where this species evidently reaches its finest development, much larger and taller specimens than those I have measured undoubtedly occur.

In my supposition that the beech does not grow on the Illinois side of the river, in Wabash county, Ill., I was mistaken. I have since been shown a fair-sized tree on the bank of Coffee Creek, by Dr. Schneck, who knows of the existence of several others in the same locality.

Page 86. *Populus heterophylla.* In the spring of 1883, an excellent opportunity was afforded the writer for ascertaining the average size attained by this species in a particular locality along the northwestern edge of Monteur's pond, in Knox county, Ind. A considerable number of the larger trees had been cut during the winter, apparently when the pond (here quite shallow) was frozen over. At the time of my visit, in the latter half of April, these felled trees were in *full blossom,* so that the height could be measured very exactly. Only five trees were measured, my time being too limited for further investigations. Following are the measurements taken:

	Diameter acr's top of stump.	Trunk.	Total length.
	1.50	48	72
	1.65	57	76
	1.25	38	75.50
	1.65	53.50	78
	2*	28.50	77
Average,	1.61	45	75.70

Page 87. For *Populus "tremuloides"* read *grandidentata.* While *tremuloides* may occur, it is quite certain that all the aspens that I have seen are *P. grandidentata.*

Page 87. *Taxodium distichum.* It may interest the readers of

* Diameter at 3½ feet from ground.

the BOTANICAL GAZETTE to know that the largest tree of this species on record grows near the village of Santa Maria del Tule, in the State of Oaxaca, Mexico. The trunk is 118 feet in circumference, or considerably greater than the largest of the California Sequoias, but the height is said to be only 120 feet, or decidedly less than the tallest specimens of this species growing in Indiana. [NOTE.—I find in three different accounts of this tree some marked discrepancies as to the dimensions stated. Thus, in Humboldt's "Travels" the girth is given as 118 feet; an article in Frank Leslie's "Popular Monthly" (vol. v., March, 1878, p. 354) gives the girth as 117 feet 10 inches, while another in the "Popular Science Monthly" makes the following statement: "When Humboldt saw it, in 1851, it measured 42 feet in diameter, 146 feet in circumference, and 282 feet between the extremities of the two opposite branches."]

Page 88. *Pinus mitis.* The interrogation mark should be removed from this species, which has since been ascertained to be the one growing on the hills of Southern Illinois. I have no information respecting the size of this tree as growing in the region referred to, but the following clipping from the *Shenandoah Valley* refers to what is evidently regarded as an unusually large specimen for that portion of Virginia:

"Mr. Samuel Olinger, residing near Quicksburg, Va., a short time ago cut and had sawed into lumber a yellow pine tree, which, we think, is entitled to the appellation of the 'King of the Forest' The result was 2,420 feet of lumber, inch measure. He took 91 feet in length from the tree, and the last cut squared 15 inches. It is thought, had the saw been large enough to cut through the first cuts without hewing them down, the result would have been at least 3,000 feet of inch lumber; the saw cutting only 21½ inches, much had to be hewed off of the logs."

In conclusion, I would like to request those who are interested in the subject to make measurements of large or full grown trees whenever opportunity offers. The woods are fast disappearing, and even in the remnants the finest trees are constantly being culled. There are several species of which we have no satisfactory measurements, and to these attention is particularly directed. They are the following: *Magnolia acuminata, Tilia heterophylla, Æsculus glabra, Æ. flava, Negundo acerοides, Rhustyphina, Robinia pseudacacia, Prunus Americana, P. serotina, Pirus angustifolia, P. coronaria, Cratægus* (all the species except *subvillosa*), *Amelanchier Canadensis, Aralia spinosa, Viburnum Lentago, V. prunifolium, V. dentatum, Fraxinus pubescens, F. viridis, F. sambucifolia, Ulmus alata, U. fulva, Celtis Mississippiensis, Carya sulcata, Quercus bicolor, Q. coccinea, Q. falcata, Q. lyrata, Q. Michauxii, Q. nigra, Q. phellos, Q. stellata, Castanea Ameri-*

cana, Fagus ferruginea, Ostrya Virginica, Betula leuta, B. nigra, Salix lucida, S. discolor, Juniperus Virginiana and *Pinus mitis.*

There still exists in the southern part of Indiana (especially in Pike, Dubois and Crawford counties) considerable actually "virgin" forest, in which probably the largest trees now growing in the State are to be found. During a recent trip through this country, over the line of the Louisville & St. Louis Air-Line R. R., I was much impressed with the magnificent growth of beech and other trees, growing densely as possible, and apparently untouched by the ax for miles along the railroad. Saw mills were already established in places, so the work of destruction has begun, and will doubtless continue as long as the material lasts.

Notes on Edible Plants. III.

BY E. LEWIS STURTEVANT.

ANONACEÆ.

This order contains a number of edible and often aromatic plants, and some are in esteem in their native countries, even to the European palate. In tropical Asia the perfumed fruit of *Uvaria Burahol*, Bl , *U. dulcis*, Dun., and *U. heterophylla*, Bl., are eaten (Baillon), in Burma, the fruit of *U. grandiflora*, which has the taste and the appearance of the North American Papaw (Pickering), and in Ceylon that of *U. Zeylanica*, of a vinous taste, and resembling that of an apricot (Don). In Jamaica *U. alba* is said by Lunan to have a fruit eaten when roasted, and in Jamaica *U. dulcis* is grown in the public gardens as a fruit tree (Morris); *U. cordata* is also enumerated amongst the edible species (Masters).

Guatteria cerasoides, Dun., of Western Hindustan, has dark red, cherry size, astringent fruit, eaten by the natives; and the black, fleshy, smooth, acid-sweet berries of *G. sempervirens*, Dun., are also eaten (Don).

The Unonias have aromatic properties. *U. carminativa*, Arrud. affords in the capsules of its seeds a spice relished as a pepper in Brazil (Arruda); *U. discreta*, L. fil. of Surinam, *U. dumetorum*, Dun., of Cochin China, *U. esculenta*, Dun. of India about Madras, have fruits said to be edible and of good taste (Don); those of *U. Corinthi* are also classed as edible (Baillon), and those of *U. undulata*, Dun., are used as a condiment in Guinea.

In the United States we have *Asimina triloba*, Dun., a tree common in the Southern portions, and even extending as far north as Western New York. Its oblong pulpy fruit, about 4 inches long, when ripe has a rich, luscious taste, offensive to many people, but relished by some. It is a natural custard, says Flint, "too luscious for the relish of most people. The fruit is nutritious, and a great resource to the savages." *A. glabra*, L., is found in South Florida, the fruit small and eatable when fully ripe (Vasey).

Monodora myristica, Dun. is cultivated in Jamaica, its fruit called Guinea or Calabash nutmegs, used by the negroes in cooking. It is a native of Africa (Baillon).

Quite a number of the genus *Anona* are cultivated for the sake of their fruits, as *A. Asiatica*, L. of Ceylon (De Candolle) and grown for its fruit in Cochin-China (Unger); *A. Cherimolia*, Mill. of Peru, and its fruit in high esteem. The fruit, when ripe, is of a dark purple, the flesh soft and sweet, enclosing numerous seeds. Cultivated in all warm climates (Baillon), and introduced into Florida before 1877 (Am. Pom. Soc.); *A. cinerea*, Dun., of the West Indies (Don); *A. mucosa*, Jacq. of Martinique and Guiana, and cultivated in the Moluccas, although the fruit seems to be of an unpleasant taste (Don); *A. muricata*, Jacq., the sour sop of the West Indies and neighboring America, in general esteem, and even cultivated in Arabia (Baillon); *A. obtusifolia*, Tuss., cultivated in St. Domingo (Don); *A. reticulata*, L. of the West Indies, and cultivated also in Brazil, the East Indies and the Mauritius (Baillon); *A. squamosa*, L. of tropical America, and now introduced to Cochin-China, China, the Philippines and India. Other species, which are mentioned as bearing edible fruit, but which we have not seen mentioned as cultivated, are *A. chrysocarpa*, whose fruit is eaten in Senegal; *A. longifolia*, of Guiana and Trinidad, and whose fruit was much prized by the Caribs (Unger), and said to be excelled by Lindley; *A. Marcgravii*, Mart. and *A. Pisonis*, Mart. of Brazil (Baillon); *A. paludosa*, Anbl. of Guiana (Unger); *A. palustris*, L., the alligator apple of the West Indies, and Cortissa of Brazil (Don); *A. punctata*, Anbl. of Cayenne, whose fruit is of good flavor and pleasant eating (Lindley); *A. Senegalensis*, Pers., which furnishes one of the best fruits of Sierra Leone, Senegal, and the banks of the Congo (Sabine); *A. sylvatica*, St. Hil. of Brazil (St. Hillaire); and *A. tripetala* of South America, esteemed by Lunan in Jamaica as a delicate fruit.

The genus *Xylopia* has aromatic fruits, and the seeds of many species are used as a spice, as *X. Aethiopica*, A. Rich., the

Guinea pepper employed by the negroes from time immemorial; *X. aromatica*, used by the negroes of Guiana as a nutmeg; *X. frutescens*, used as a seasoner in Brazil (Baillon); *X. glabra* of Jamaica, pronounced by Browne as having an agreeable fruit; *X. grandiflora*, (Baillon), and *X. sericea*, St. Hil., whose seeds furnish a spice in Brazil (St. Hillaire).

The genus *Xylopia* seems to include edible species referred by some authors to the genera *Unona* and *Habzelia*.

BERBERIDEÆ.

This natural order includes a number of edibles of however slight importance.

Lardizabala biternata, Ruiz. et Pav. of Chili and Peru, has fruits which are sold in the markets, the pulp being sweet and of pleasing taste (Don); *Boquila trifoliata* also has edible berries about the size of a pea, eaten in Chili (Maout & Decaisne); and *Holboellia angustifolia*, Wall. of Nepal, and *H. latifolia*, Wall. of Sikkim, have mealy and insipid, yet edible, fruits.

Berberis aquifolium, Pursh. of Western North America, bears sour fruit, but not unpleasant to the taste (Howell); the juice when fermented makes, on the addition of sugar, a palatable and wholesome wine (Rothrock); *B. aristata*, D C. of the mountains of Hindustan, has been introduced into European fruit gardens. It is said to yield purple fruits, which, in India, are dried like raisins and used at desert (Downing); *B. Asiatica*, Roxb., has large ovoid or subglobose berries, red or black, which are eaten in the East Indies (Brandis); *B. buxifolia*, Lam. from Magellan's Straits to Chili, has comparatively large, black, hardly acid, slightly astringent fruit, eaten in Valdivia and Chiloe (Mueller); *B. Canadensis*, Pursh., of the Alleghanies of Virginia and southward, is a small shrub with red berries of an agreeable taste (Pursh.); *B. cristata* of Nepal furnishes fruits which are dried and sent down as raisins to the plains (Wight); *B. Darwinii* Hook. of Chiloe and South Chili, is grown in cottagers' gardens in England, and the fruit esteemed by children as equal to black currants (Gard. Chron.); *B. dulcis*, D. Don, probably the *B. buxifolia*, Lam., has ripened fruit in Edinburg, described as large and excellent (Downing); *B. glumacea*, Spreng. is abundant in spruce forests in Oregon, the fruit blue, acid, but eatable (Newberry); *B. heteropoda* is an edible barberry from Turkistan, and is growing in the Experimental collection of the University of California (Hilgard); *B. lycium* has fruit which in China is preserved, and whose young shoots and leaves are used as a vegetable, or for infusion as a tea (Smith); *B. Nepalensis*, Spreng. of

the Himalayas, is an evergreen species with edible fruit which, dried as raisins, is sent down to the plains for sale (Royle); *B. nervosa*, Pursh., is an Oregon species with edible fruit (Howell); *B. pinnata*, Benth. in New Mexico, has blue berries of pleasant taste, sweet with a slight acidity (Bigelow); *B. repens*, Lind., is common in Utah, where its fruit is highly prized (Jones), and is made into confections and freely eaten (Lloyd); *B. trifoliata*, Gray, of Western Texas, has red acid berries, used for tarts (Torrey); *B. vulgaris*, L. was early introduced into the gardens of New England, and increased so rapidly that in 1754 the Province of Massachusetts passed an act to prevent damage to wheat arising from its presence in the vicinity of grain fields. The leaves were formerly used to season meats with in England (Gerarde); and its fruit is now used for preserves. A stoneless variety is sometimes found. There are four kinds known, the common red, large red, purple and white (Bucke). A black fruited variety is said by Tournefort to occur on the banks of the Euphrates and to be of a delicious flavor. *Bongardia Rauwolfi*, C. A. Meyer, occurs from Greece to the Caucasus. The Persians roast or boil the tubers, and eat the leaves as sorrel (A. A. Black). *Nandina domestica*, Thunb., is a handsome evergreen shrub of China and Japan, and extensively cultivated for its fruit, which are red berries of the size of a pea (Don). *Podophyllum callicarpum*, Raf., is said by Robin and Rafinesque, in their Flora of Louisiana, to have fruit the size of a large filbert, sweet, good to eat, and of which preserves are made; *P. emodi*, Wall. of India, has edible berries, but tasteless (Hooker & Thomson); *P. peltatum*, L., is the May apple, the mawkish fruit eaten by pigs and boys (A. Gray), relished by many persons (Porcher), extremely delicious to most persons (Barton), a pleasant fruit (Newport), but to our taste mawkish and disagreeable.

Forestry Notes.

BY F. L. HARVEY.

Catalpa speciosa, Warder. The distribution of *Catalpa speciosa* is of considerable interest, as it has been the belief of botanists that it is not found native west of the Mississippi river north of the Louisiana line. In a former number of the GAZETTE we gave an account of fine specimens, four feet in diameter, growing in the hotel yard, and in the grounds of Judge A. B. Williams at Washington, Hempstead county. If one was not informed that the seeds were introduced from Louisiana he

would be disposed to regard the species indigenous, as it grows plentifully along the streams in that vicinity. The following from the *Hope Radical* will be of interest:

Mr. John H. Smith was born in 1817, and came to Hempstead county in 1824. In 1831, while a boy of 14 years of age, he carried the mails from Washington, this county, to Natchitoches, La., a distance of 180 miles, on horseback. It required ten days in the saddle to make the round trips, two trips each month. On the Red river he passed a catalpa tree hedge on his frequent trips, and on one occasion filled his pocket with the fluffy seed, and carelessly scattered them in the old court yard in Washington, where they grew, and from that accidental seeding, the catalpa tree owes its present extensive existence in Hempstead county.

If Mr. Smith's account be correct, the oldest trees found in Hempstead county are not over 50 years old, and as there are several about there four feet in diameter, we have another proof that this species makes rapid growth. The trees grow tall and develop a long trunk, which maintains well its size.

It was the impression of botanists that this species occurred native in Southeast Missouri and along the low country of Northeast and East Arkansas, but Mr. John Teas, of Carthage, Mo., who went to that region and investigated, came to the conclusion that it was not indigenous, and that opinion probably still remains.

Not fully convinced, we left the question open in a consideration of the "Forest Trees of Arkansas" in the *Forestry Bulletin* for June. Since the publication of that account investigations in Prairie county, Ark., prove beyond a doubt that it grew in the woods when the country was first settled. Mr. G. W. Letterman informs me that he finds it plentiful in the woods on Black river in Arkansas, considerable timber having been shipped from that region and still plenty of trees remain. Specimens three feet in diameter and 200 years old were secured for the American Museum of New York City.

Crataegus arborescens, Elliott, overlooked in enumerating the Forest Trees of Arkansas in the *Forestry Journal*, is common in the low ground throughout the State, attaining a diameter of 8 inches and a hight of 30 feet.

Crataegus cordata, Ait., common along the streams and swampy places in northwestern Arkansas. Does not bloom until May in this region. Escaped notice until this spring. Attains a hight of 15 feet.

Sophora affinis, Torr. & Gray, credited to Arkansas by the authority of Lindheimer, has been rediscovered by the writer and also by G. W. Letterman in Nevada county, Ark., on the border of prairies near Prescott. Mr. Letterman secured specimens 1 foot in diameter.

GENERAL NOTES.

Notes from Florida.—In a letter to Dr. E. L. Sturtevant, Mr. William S. Allen, Chocaluskee, Monroe county, Florida, writes as follows: "I do not recollect whether in a former letter I ever informed you that many of our annuals are perennials here. One of my neighbors has a fine lot of Lima beans that have been in bearing for three years. They cover a wire fence about 100 yards long. Egg-plant, okra, peppers, cotton, tobacco, all are perennial. As a stalk of tobacco matures the leaves drop off, suckers put out, and in their turn ripen a crop, and it is not uncommon to cut three crops a year from the same land. I do not use the weed, but all my laborers, without exception, smoke and chew, and I find in out of the way places a dozen plants of tobacco growing wild, scattering seeds and holding their own for years without care. Wild cotton grows all around me. Some are standing where I found them when I came here thirteen years ago, and have been full of cotton every year since 1870. . . . . Common Indian pumpkins are perennial, but the Cushaw will only bear one crop, and then dies, as at the north."

It is not usually known that the cow-pea furnishes varieties which are esteemed as human food. Mr. Allen says, speaking of the Whip-poor-will pea, that, "It is generally known among farmers here as six-weeks pea, and is used both as a snap and shell. They are quite palatable. Farmers here make great use of them. In picking we pick partly full-grown pods, and partly mature peas that have not yet become dry. These are boiled together, and are a popular dish."

Melampyrum Americanum.—In July last I found growing on the North Valley Hill, Chester county, a broad-leaved variety of *Melampyrum Americanum*. The leaves are all *ovate* except the lowest pair, which are lanceolate, the uppermost having a minute tooth or two near the base, or very frequently none at all. The most striking peculiarity is that the spatulate cotyledons remain as long as the plant lives. It is so unlike the regular form that it seems hard to call it a mere variety, but on examination and comparison I think it can be nothing more, for of over one hundred specimens collected all maintained the above characteristics fully. The variety seems to have been over-looked by our botanists, for I see no mention of it in Gray, Wood, or the "Flora Cestrica" of Darlington.—S. T. FERGUS, *West Chester, Pa.*

Puccinia heterospora B. & C.—In the September number of *Hedwigia*, Dr. G. Winter mentions a fungus on *Sida spinosa*, collected in Southern Illinois, by Mr. F. S. Earle. It is one of those troublesome species of *Puccinia*, having both one and two-celled spores; and an examination of my own specimens from Mr. Earle shows that in the two-celled spores (which are comparatively few) the position of the septum varies, being either transverse, longitudinal or oblique. In the *Journal of the Linnean Society* for 1875 is the following description:

Uromyces Thwaitesii B. & Br., Maculis luteis hypophyllis; soris circinantibus

brunneis; sporis obovatis lalvibus longissime pedicellatis. On leaves of *Sida humilis* Willd. and *S. hirsuta*, Peradenia, Jan. 1855, Dec. 1867. There are rarely two cystoblasts parallel to each other.[1]

Dr. Winter has a specimen on *Sida rhombifolia*, from South Africa, and with this he compares Mr. Earle's specimen and finds it to agree. He refers it to its proper genus and calls it *Puccinia Thwaitesii*, (B. & Br.) In the Linnæan Journal, for 1869, is the following:

Puccinia heterospora B. & C. Soris minutis in glomerulos orbiculares congestis brunneis; sporis subglobosis, pedicello deorsum attenuato subæqualibus, demum biseptatis. On the leaves apparently of some malvaceous plant.[2]

I received specimens from Mr. Earle in the fall of 1882, but with the resources then at my command was unable to determine them. More recently I have had access to the Curtis collection and references to the above descriptions. A comparison shows Mr. Earle's specimen to be identical with the original of *Puccinia heterospora*. As I have not seen *Uromyces Thwaitesii*, I can not say whether it is identical with *Puccinia heterospora* or not, but in either case Mr. Earle's specimens must be referred to the latter, which is the older name.

The host of the Curtis specimen is pretty certainly *Sida triquetra*.

In *Grevillea*, Vol. III, Dec., 1874, is described *Uromyces pulcherrima* B. & C. on *Abutilon Texense*, from Texas. I have examined the Curtis specimen and can not distinguish it from *Puccinia heterospora*. The collection also contains specimens labeled *Uromyces pulcherrima* B. & C. on *Abutilon parvulum* and *Anoda hastata*.

A. B. SEYMOUR.

EDITORIAL NOTES.

DR. CARPENTER, at the last meeting of the British Association, illustrated the power living forms have of adapting themselves to environment by the changes in the small-pox bacteria. Formerly the disease was very severe and known as the "black-pox," but at present it exists in a much milder form. During the last siege of Paris, however, the bacteria reverted to the original form and the "black-pox" again appeared.

WE HAVE HAD Kerner showing how plants have contrived to escape unwelcome insect visits, and our respect for plants has been thereby increased, although constructing a reason for everything is not always safe. But Mr. Alexander Wilson has gone farther, and at the British Association suggested that the closed ovary of the Angiosperms was a contrivance for the ovules to escape the attacks of parasitic fungi. That the closing up of the ovules is a hindrance to the action of the pollen can be understood, and to overcome it we find adaptations of tissue, modifications of structure, changes in the positions of ovules, etc. This outlay, Mr. Wilson reasons, is compensated for by some great advantage, which he concludes to be that already mentioned. He likens the closed ovary to Tyndal and Pasteur's sealed flasks, from which are kept all fungus spores,

[1] Berkeley and Broome, Ceylon Fungi, in Journ. Linn. Soc., Vol. XIV, p. 92, 1875.

[2] Berkeley and Curtis, Cuban Fungi, in Jour. Linn. Soc., Vol. X, p. 356, 1869.

even the air which gains admission being filtered through tissues and their secretions. This is one of those subjects which lead to the most tempting generalizations, but should be considered yet more as something interesting than settled.

THE GERMAN SCIENTIFIC EXPEDITION, under Dr. Koch, to investigate the Egyptian cholera has not yet reached any very definite results. The only thing set at rest is that the Bacillus is identical with that found in the case of Asiatic cholera.

WE NOTE that Dr. Farlow has received one of the numerous gold medals awarded by the juries of the late International Fisheries Exhibition, for his work on the marine algæ.

WE WOULD CALL attention to the capital address of Prof. E. Ray Lankester, as president of the biological section of the British Association, upon "The Endowment of Biological Research." It should be in the hands of all the boards of management of our colleges and universities, and may be found either in *Science* or *Nature*.

THE WAY THAT new species of fungi are pouring in upon us is rather overwhelming. Not a month passes without its lists of new species, which leads us to think either that we have never looked much for fungi before, or that specific lines are not yet well drawn.

WE HAVE JUST received notice of the death of Mr. Chas. E. Perkins, of Somerville, Mass. It will be remembered that he published in the GAZETTE for March of this year a list of the "Ballast Plants of Boston and Vicinity." He was a young man and a good collector, his large collection, left to the Middlesex Institute of Malden, being especially rich in introduced and ballast plants. He had in contemplation both a local flora and a garden flora, which his friends may be able to complete from his notes.

WE WOULD call attention to the extension of time given in competing for the GAZETTE prize, November 1 being substituted for May 1.

CURRENT LITERATURE.

Flora of Worcester county, Massachusetts. By Joseph Jackson. Published by the Worcester Nat. Hist. Soc. 1883. 48 pp. 8vo.

This society, but four years old, is doing a good work in bringing before the people of its own neighborhood information upon the various departments of natural history. This is done by placing in charge of its collections, which occupy three rooms, a competent custodian, whose services, not as guide only, but also as teacher, are freely at the disposal of the public. During the past year 20,000 visitors have availed themselves of this privilege. The pamphlet before us is but an outgrowth of this work, and is surely well done. The county extends north and south across the State and contains quite a diversity of surface so that both southern and northern New England may be said to be represented. Only the Phænogams and Vascular Cryptogams are included, not so much from desire, we infer, as from necessity. The list numbers 812 species, belonging to 387 genera. The only criticism that could be made is that there

is no mark to indicate introduced plants. True this work is done in Gray's Manual, but one can not always remember what it says, and may not care to look it up. Now that introduced plants are getting so thoroughly mingled with our indigenous flora, too great care can not be exercised in keeping them apart in our lists, for it is becoming a more difficult thing to do every year.

Catalogue of Canadian Plants. Part I.—Polypetalæ. By Prof. John Macoun. Montreal. 8vo. 192 pp.

This Catalogue is published by the Geological and Natural History Survey of Canada, under direction of Alfred R. C. Selwyn. Heretofore about the the only knowledge of the Canadian flora we have had has come from the "Flora Boreali Americana," Torrey and Gray's Flora and Gray's Synoptical Flora. These works but incompletely represent it; the first from lack of exploration, the others chiefly from the fact that they only include the Polypetalæ and Gamopetalæ. The present Catalogue has been begun quite elaborately, and besides drawing from the sources above mentioned, is based upon very extensive explorations, not the least of which were made by the author himself. Under each species is given its synonymy, habitats and collectors. The range from Alaska to Newfoundland is a tremendous one, but of course in these northern regions the number of species will bear no such relation to area as further south. In the list are included 907 species, under 243 genera, but no attempt is made to separate introduced plants from the indigenous, further than a mention of the fact in the notes. The Rocky Mountain region seems to be the one most needing exploration, for the old collections, good as they were, covered a comparatively small area, and many of their plants need rediscovery. We imagine that such an exploration would result more in the establishment or not of old species than in new species. We certainly hope that the material for subsequent catalogues may speedily be gotten together and the good work pushed to its completion.

Thirty-third Annual Report of the State Museum of Natural History. (Report of the Botanist, Chas. H. Peck.) 50 pp. with two plates. 1880.

Thirty-fourth Annual Report. 58 pp. with four plates. 1881.

These reports are usually quite delayed, but full of new material when they do appear. Mr. Peck, in spite of ill health, seems to be constantly at work. In the 33d Report, besides a general list of "Plants not before reported," in which are many new species of fungi, is a paper upon the New York species of *Amanita*, which number 14, 4 of which are new. The two plates contain the figures of 14 new species, one of them, *Caliciopsis*, being a new genus related to *Tympanis*. In the 34th Report there is the same rich display of new species, and along with them a description of some of our commoner injurious parasites, such as corn smut, etc. The plates are excellent, but in the text sufficient prominence is not given to the specific names, especially of new species.

Report on the Michigan Forest Fires of 1881. No. 1 of Signal Service Notes. By William O. Bailey. Washington. 1882. 8vo. 16 pp. (with map and diagrams).

This gives a full and very interesting account of these great forest fires, a good map of the burned district, and some diagrams showing the principal directions of the fire. The causes assigned are of two kinds, the natural ones being such as prevailing southerly winds, an accumulation of hot air in consequence, an area of low atmospheric pressure north of the fires, opposing winds south of the center, a protracted drought, and dry soil. The "local causes" given are great areas of dead timber left standing, and carelessness of settlers in managing local fires.

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INDEX TO THE GENUS CAREX

OF GRAY'S MANUAL.

BY JOS. F. JAMES, CUSTODIAN, CIN. SOC. NAT. HIST.

The following Index to the Genus Carex embraces all the species and varieties, and the synonymy of the same, as given in the last edition of Gray's Manual. A few are added from the first edition of the same. In it has been incorporated all the latest changes in nomenclature at present accessible. In the first columns are placed all the species with their varieties, arranged in alphabetical order, and numbered to correspond with the numbers of the Manual. Opposite to each species of the first column, are placed in the second, all the synonyms; and opposite each synonym of the first column is placed in the second the species. All have numbers corresponding to the Manual. All the synonyms are in *italics*, and all the species are in ordinary type:

73. *abbreviata*, Schw., Boott.; 73. Torreyi, Tuckerman.
47. *acuta*, var. *vulgaris*, L.; 47. vulgaris, Fries.
49. *acuta*, var. *sparsiflora*, Dew?; 49. torta, Boott.
51. *acuta*, var. *erecta*, Dew; 51. stricta, Lam. (not of Good.)
51. *acuta*, Muhl., etc. not Linn.; 51. stricta, Lam. (not of Good.)
42. *adusta*, Boott. (not of former ed.); 42. albo-lutescens, Schw.
43. *adusta*, former ed., not of Boott; 43*. silicea, Olney.
81. *æstivalis*, M. A. Curtis; 81. virescens, Muhl., var. æstivalis, Olney.
19. alopecoidea, Tuckerman; 19. *cephalophora*, var. *maxima*, Dew.
42. albo-lutescens, Schw.; { 42. *adusta*, Boott. (not of former ed.) { 42. *argyrantha*, Tuckerm.
45. alata, Torr.; (no syn.)
63. alpina, Swartz; 63. *Vahlii*, Schk.
92. *alba*, var. *setifolia*, Dew; 92. eburnea, Boott.
142. *ampullacea*, var *utriculata*, of former ed.; 142. utriculata, Boott.
149. *ampullacea*; 149. miliaris, Mx., var.? Olney.
51. *angustata*, Boott; 51. stricta, Lam. (not of Good.)
89. *anceps*, Willd., Schk.; 89. laxiflora, Lam. var. intermedia, Boott.
50. aptera, Boott; (no syn.)
48. aquatilis, Wahl.; (no syn.)
38. *arida*, Schw. and Torr.; 38. Muskingumenss, Schw.
42. *argyrantha*, Tuckerm.; 42. albo-lutescens, Schw.
78. *aristata*, Dew., not R. Br.; 78. Davisii, Schw. and Torr.

106. arctata, Boott. ; 106. *sylvatica*, Dew., not of Hudson.

124. aristata, R. Br. ; { 124. *atherodes*, Spreng. / 124. *mirata*, Dew. / 124. *orthostachys*, (Eu.)

62. atrata, L., (no syn.)

124. *atherodes*, Spreng. ; 124. aristata, R. Br.

65. aurea, Nutt. ; 65. *pyriformis*, Schw.

9. Backii, Boott. ; (no syn.)

57. *Barrattii*, Schw. and Torr. ; 57. littoralis, Schw.

132. *Bellavilla*, Dew. ; 132. lupulina, Muhl.

46. *Bigelovii*, Torr. ; 46. rigida, Good., var.? Bigelovii.

112. *binervis*, Dew., not of Smith ; 112. fulva, Good.

89. *blanda*, Dew. ; 89. laxiflora, Lam., var. blanda.

110. *blepharophora*, Gray ; 110. flexilis, Rudge

10. bromoides, Schk. ; (no syn.)

15. *bracteosa*, Schw. ; 15. vulpinoidea, Michx.

31. *Buckleyi*, Dew ; 31[a]. vitilis, Fries.

61. Buxbaumii, Wahl. ; 61. *canescens*, L. (in part)

147. bullata, Schk. ; 147. *cylindrica*, Schw., (in part) Tuck. etc.

146. *bullata*, of authors, not Schk. ; 146. Tuckermanii, Boott.

3. capitata, L. ; (no syn.)

31. canescens, L. (in part.), { 31. *curta*, var. *brunnescens*, Pers. / 31. *curta*, Good. (Gray. ed. '31.) / 31. *Richardi*, Michx.

31. *canescens*, var. *vitilis* ; 31[a]. vitilis, Fries

31. *canescens*, var. *apicola*, ed. 1 ; 31[a]. vitilis, Fries

31. *canescens*, var. *sphærostachya*, ed. 1 ; 31[a]. vitilis, Fries.

47. *caespitosa*, of authors ; 47. vulgaris, Fries.

61. *canescens*, L., (in part) ; 61. Buxbaumii, Wahl.

75. Careyana, Torr. ; (no syn.)

109. capillaris, L. ; (no syn.)

132. *Canadensis*, Dew ; 132. lupulina, Muhl.

19. *cephalophora*, var. *maxima*, Dew. ; 19. alopecoidea, Tuckerm.

21. *cephalophora*, var. Torr. ; 21. sparganioides, Muhl.

23. cephalophora, Muhl. ; 23. *cephaloidea*, Dew (in part).

23. cephalophora, var. angustifolia, Boott. ; 23. *Leavenworthii*, Dew.

21. *cephaloidea*, Dew. (in part) ; 21. sparganioides, Muhl.

22. cephaloidea, Dew., (in part) Boott ; (no syn.)

23. *cephaloidea*, Dew. (in part) ; 23. cephalophora, Muhl.

27. chordorhiza, Ehrh. ; (no syn.)

18. conjuncta, Boott. ; 18. *vulpina*, former editions.

70. *conoidea*, Cray, Gram. and Cyp., not Schk. ; 70. panicea, L., var. tetanica, Olney.

75. conoidea, Schk. ; 75. *tetanica*, Schw. and Torr., not Schk.

82. *costata*, Schw. ; 82. virescens, Muhl.

126. comosa, Boott., { 126. *furcata*, Ell., not of Lapeyr. / 126. *Pseudo-Cyperus*, Schw. and Torr., Dew. etc. in part, not of L.

128. *Cooleyi*, Dew. ; 128. hystricina, Willd.
136. *Collinsii*, Nutt. ; 136. subulata, Michx.
16. *crus-corvi*, Shuttl. ; 16. Nuttallii, Schw.
41. *cristata*, Schw. ; 41. lagopodioides, var. cristata, Carey.
41. *cristata*, var. *mirabilis*, Boott. ; 41. lagopodioides, var. mirabilis, Olney.
55. crinita, Lam. ; 55. (Gr. ed. 1, '44) *gynandra*, Schw. Anal. Tab.
55. crinita, var. morbida, Carey ; 55. *paleacea*, of authors.
71. *Crawei*, Dew. ; 71. microdonta, Torr.
31. *curta*, Good. ; 31. canescens, L. (in part)
31. *curta*, var. *brunnescens*, Pers. ; 31. canescens, L. (in part.)
37. *cyperoides*, Dew., not L. (Gray ed. 1,'31) ; 37. sychnocephala, Carey.
146. *cylindrica.*, former ed. ; 146. Tuckermanii, Boott.
147. *cylindrica*, Schw., at least in part, Tuckerm., etc. : 147. bullata, Schk.

78. Davisii, Schw. and Torr. ; { 78. *aristata*, Dew., not of R. Br. / 78. *Torreyana*, Dew.
96. *Davisii*, Dew. etc. ; 96. Emmonsii, Dew.
14. decomposita, Muhl. ; 14. *paniculata*, var. *decomposita*, Dew.
108. debilis, Michx. ; { 108. *tenuis*, Rudge. / 108. *flexuosa*, Muhl.
108. debilis, var. pubera ; passing into C. venusta, Dew.
33. Deweyana, Schw. ; (no syn.)
12. disticha, Huds ; { 12. *intermedia*, Good. / 12. *Sartwellii*, Dew. and former ed.
28. *disperma*, Dew. ; 28. tenella, Schk.
25. *disperma*, Kunze. (not Dew.) Gray ed. 1,'25 ; 25. rosea, Schk.
80. *digitalis*, Schw. and Torr., not Willd. ; 80. gracillima, Schw.
88. digitalis, Willd. ; { 88. *oligocarpa*, Schw. and Torr., not Schk. / 88. *Vanvleckii*, Schw.
21. *divulsa*, Pursh, not Good. (prob.) ; 21. sparganioides, Muhl.

92. eburnea, Boott. ; 92. *alba*, var. *setifolia*, Dew.
13. *Ehrhartiana*, Hoppe ; 13. teretiuscula, var major, Koch.
96 Emmonsii, Dew. ; { 96. *Novæ-Angliæ*, var. *Emmonsii*, ed. 2. / 96. *Davisii*, Dew., etc.
34. exilis, Dew. ; (no syn.)
113. extensa, Good. ; (no syn.)

44. *festucacea*, Schk., of former ed. ; 44. straminea, Schk., var. festucacea, Boott.
45. *festucacea*, var. *tenera*, former ed. in part ; 44. tenera, Dew.
41. *festucacea*, var. *mirabilis*, former edtions ;41. lagopodioides, var. mirabilis, Olney.
116. filiformis, L. ; (no syn.)
57. *flacca*, former ed. ; 57. littoralis, Schw.
77. flaccosperma, Dew. ; 77. *grisea*, var. *mutica*, former ed.
77. *flaccosperma*, Dew. (Gr. ed. 1 .'65) ; 76. grisea, Wahl.

108. *flexuosa*, Muhl.; 108. debilis, Michx.
110. flexilis, Rudge; 110. *blepharophora*, Gray.
114. flava, L.; (no syn.)
44. fœnea, Willd.; (no syn.)
43. fœnea, var.? ferruginea, Boott.; (no syn.)
43. *fœnea*, var.? *sabulonum*, Boott., 43*. silicea, Olney.
79. formosa, Dew.; (no syn.)
130. *folliculata*, Schw., Mich., not L.; 130. intumescens, Rudge.
134 folliculata, L.; 134. *xanthophysa*, Wahl.
6. Fraseriana, Sims; (no syn.)
138. *Frankii*, Kunth; 138. stenolepis, Torr.
89. *fusiformis*, Chapm.; 89. laxiflora, var. styloflexa, Boott.
112. fulva, Goodwin.; 112. *binervis*, Dew., not of Smith.
126. *furcata*, Ell., not Lapeyr; 126. comosa, Boott.

31. *Gebhardi*, Hoppe; 31*. vitilis, Fries.
140. gigantea, Rudge.; (no syn.)
107. glabra, Boott.; (no syn.)
57*. glaucescens, Ell.; (no syn.)
57. glauca, Scop. (Gray ed. 1. '50); 57. littoralis, Schw.
47. *Goodenovii*, Gay. (Gr. ed. 1, '44); 47. vulgaris, Fries.
28. *gracilis*, ed. 1, not Ehrh.; 28. tenella, Schk.
66. *Grayana*, Dew.; 66. livida, Willd.
72. granularis, Muhl.; (no syn.)
76. grisea, Wahl., { 76. *laxiflora*, Schk., not of Lam. / 76. *flaccosperma*, Dew. (Gr. ed. 1, '65.)
77. *grisea*, var.* *mutica*, former ed.; 77. flaccosperma, Dew.
80 gracillima, Schw.; 80. *digitalis*, Schw. and Torr., not Willd.
111. *Greeniana*, Dew.; 111. lævigata, Smith.
131. Grayii, Carey; (no syn.)
1. gynocrates, Wormskiold; (no syn.)
55. *gynandra*, Schw. Anal. Tab. (Gr. ed '44); 55. crinita, Lam.
56. gynandra, Schw., Boott.; (no syn.)

16. *Halei*, Dew.; 16. Nuttallii, Schw.
119. *Halseyana*, Dew. and ed. 1; (119). 68. panicea, var. scariosa, Olney.
139. *Hartii*, Dew.; 139. retrorsa, Schw. var. Hartii

71. *heterostachya*, Torr.; 71. microdonta, Torr.
83. *hirsuta*, Willd.; 83. triceps, Michx.
83. *hirsuta*, var. *pedunculata*, Schw. and Torr.; 83. triceps, var.
91. Hitchcockiana, Dew.; (no syn.)
21. Houghtonii, Torr.; (no syn.)
144. *hyalina*, Boott.; 44. straminea, var. Crawei, Boott.
128. hystricina, Willd.; 128. *Cooleyi*, Dew.

12. *intermedia*, Good.; 12. disticha, Hudson.
130. intumescens, Rudge; 130. *folliculata*, Schk., Michx., not L.
115. *irregularis*, Schw.; 115. viridula, Michx.
60. irrigua, Smith; { 60. *Magellanica*, Lam., according to Boott. / 60. *limosa*, var. *irrigua*, Wahl. / 60. *paupercula*, Michx. / 60. *lenticularis*, Dew., not Michx. (Gr. ed. 1. 52).
8. *Jamesii*, Schw.; 8. Steudelii, Kunth.
105. Knieskernii, Dew.; (no syn.)
40. lagopodioides, Schk.; (no syn.)
40. lagopodioides, var. cristata, Carey; 41. *cristata*, Schw.
41. lagopodioides, var. mirabilis, Olney, { 41. *cristata*, var. *mirabilis*, Boott. / 41. *festucacea*, var. *mirabilis*, former ed. / 41. *mirabilis*, Dew.
84. *latifolia*, Schk.; 84. plantaginea, Lam.
76. *laxiflora*, Schk., not Lam.; 76. grisea, Wahl.
89. laxiflora, Lam.; 89. *striatula*, Michx.
89. laxiflora, var. styloflexa, Boott; { 89. *styloflexa*, Dew. / 89. *fusiformis*, Chapm.
89. laxiflora, var plantaginea, Boott; { 89. *laxiflora*, var. *patulifolia*, former ed. / 89. *plantaginea*, Schk.
89. laxiflora, var. intermedia, Boott; 89. *anceps*, Willd., Schk.
89. laxiflora, var. blanda, Boott; { 89. *blanda*, Dew. / 89. *laxiflora*, var. *striatula*, ed. 2.
89. laxiflora, var. latiflora, Boott; (no syn.)
89. *laxiflora*, var. *patulifolia*, form. ed.; 89. laxiflora, var. plantaginea, Boott.
89. *laxiflora*, var. *striatula*, ed. 2.; 89. laxiflora, var. blanda, Boott.
111. lævigata, Smith; 111. *Greeniana*, Dew.
117. lanuginosa, Michx.; 117. *pellita*, Muhl.
122. *lacustris*, Willd. and former ed.; 122. riparia, Curtis.
4. *leucoglochin*, Ehrh.; 4. pauciflora, Lightfoot.
5. *leptalea*, Wahl.; 5. polytrichoides, Muhl.
23. *Leavenworthii*, Dew.; 23. cephalophora, Muhl. var. angustifolia, Boott.
52. lenticularis, Michx.; (no syn.)
60. *lenticularis*, Dew., not Michx. (Gr. ed. 1. 52.); 60. irrigua, Smith.
47*. limula, Fries?; (no syn.)
57. littoralis, Schw.; { 57. *recurva*, Huds. (Gr. ed. 1. 50.) / 57. *Barrattii*, Schw. and Torr. / 57. *flacca*, former editions.
58. limosa, L.; (no syn.)
60. *limosa*, var. *irrigua*, Wahl.; 60. irrigua, Smith.
66. *limosa*, var. *livida*, Wahl.; 66. livida, Willd.
66. livida, Willd.; { 66. *limosa*, var. *livida*, Wahl. / 66. *Grayana*, Dew.

28. *loliacea*, Schk. Suppl. not L.; 28. tenella, Schk.
151. longirostris, Torr.; 151. *Sprengelii*, Dew.
132. lupulina, Muhl. { 132. *lurida*, Wahl; 132. *Canadensis*, Dew.; 132. *Bellavilla*, Dew.
133. *lupulina*, var. *polystachya*, Schw. and Torr.; 133. lupuliformis, Sartwell.
132. *lurida*, Wahl.; 132. lupulina, Muhl.
133. lupuliformis, Sartwell; 133. *lupulina*, var. *polystachya*, Schw. and Torr.

54. maritima, Vahl.; 54. *paleacea*, Wahl.
60. *Magellanica*, Lam., accord. to Boott.; 60. irrigua, Smith.
97. *marginata*, Muhl.; 97. Pennsylvanica, Lam.
69. *Meadii*, Dew.; 69. panicea, L. var. Meadii, Olney.
2. *Michauxii*, Schw.; 2. scirpoidea, Michx.
5. *microstachya*, Michx.; 5. polytrichoides, Muhl.
15. *microsperma*, Wahl.; 15. vulpinoidea, Michx.
102. miliacea, Muhl.; 102. *prasina*, Wahl.
41. *mirabilis*, Dew; 41. lagopodioides, Schk. var. mirabilis, Olney.
149. miliaris, Michx. var. ? Olney; 149. *rotundata*, Wahl. ?
150. *miliaris*, Michx.; 150. pulla, Good. ? var. ? miliaris, Gr.
124. *mirata*, Dew; 124. aristata. R. Br.
136. *Michauxii*, Dew: 136. subulata, Michx.
71. microdonta, Torr.; { 71. *Crawei*, Dew.; 71. *heterostachya*. Torr.
143. *monile*, Dew, 1845, not Tuckerm.; 143. Vaseyi, Dew.
144. monile, Tuckerman; 144. *vesicaria*, var. *alpigena*, Fries.
15. *multiflora*, Muhl.; 15. vulpinoidea, Michx.
20. muricata, L.; (no syn.)
21. *muricata*, var. *cephaloidea*, Dew; 21. sparganioides, Muhl.
24. Muhlenbergii, Schk; (no syn.)
24. Muhlenbergii, var. enervis, Boott; (no syn.)
38. Muskingumensis, Schw.; 38. *arida*. Schw. and Torr.

25. *neglecta*, Tuckerm.; 25. rosea, Schk., var. radiata, Dew.
96. *Novæ-Angliæ*, var. *Emmonsii*, ed. 2: 96. Emmonsii, Dew.
96ª. nigro-marginata, Schw.; (no syn.)
46. *nigra*, Schw. and Torr., not All. (Gr. ed. 1. 42); 46. rigida, Good.
31. Norvegica, Schk.; (no syn.)
95. *Novæ-Angliæ*, Schw.; (no syn.)
16. Nuttallii, Schw.; { 16. *crus corvi*, Shuttl.; 16. *siccaeformis*, Boott.; 16. *Halei*, Dew.

148. *Oakesiana*, Dew; 148. oligosperma, Michx.
115. *Oederi*, Ehrh.; 115. viridula, Michx.
88. *oligocarpa*, Schw. and Torr., not Schk.; 88. digitalis, Willd.
90. oligocarpa, Schk.; 90. *Sartwelliana*, Gay.

145. Olneyi, Boott; (no syn.)
148. oligosperma, Michx.; 148. *Oakesiana*, Dew.
124. *orthostachys*, (Eu.); 124. aristata, R. Br.

4. pauciflora, Lightfoot,; 4. *leucoglochin*, Ehrh.
11 *pallida*, C. A. Meyer; 11. siccata, Dew.
13. *paniculata*, var. *teretiuscula*, Wahl.; 13. teretiuscula, Good.
14. *paniculata*, var. *decomposita*, Dew; 14. decomposita, Muhl.
13. *paniculata*, var. *minor* (Gr. ed. 1 14); 13. teretisucula, Good.
54. *paleacea*, Wahl; 54. maritima, Vahl.
55. *paleacea*, of authors; 55. crinita, Lam. var. morbida, Carey.
60. *paupercula*, Michx.; 60. irrigua, Smith.
78. panicea, L.; (no syn.)
67. panicea, var. refracta, Olney; 67. *vaginata*, Tausch. 67. *sparsiflora*, Fries. 67. *phæostachya*, Smith.
69. panicea, var. Meadii, Olney; 69. *Meadii*, Dew. 69. *panicea*, chiefly former ed.
70. panicea, var. tetanica, Olney; 70. *tetanica*, Schk. 70. *conoidea*, Gray, Gram. and Cyp. 70. *Woodii*, Dew. [not of Schk.
119. panicea, var. scariosa, Olney; 119. *polymorpha*, Muhl. (in part). 119. *Halseyana*, Dew and ed. 1. 119. *striata*, Torr.
74. pallescens, L.; (no syn.)
74. pallescens, var. undulata. Gr.; 74. *undulata*, Kunze.
123. paludosa, Good.; (no syn.)
31. *Persoonii*, Sieber; 31. vitilis, Fries.
93. pedunculata, Muhl.; (no syn.)
97. Pennsylvanica, Lam.; 97. *marginata*, Muhl.
98. *Pennsylvanica*, var. *Muhlenbergii*, Gray, Gram. and Cyp.; 98. varia, Muhl.
117. *pellita*, Muhl.; 117. lanuginosa, Michx.
67. *phæostachya*, Smith; 67. panicea, var. refracta, Olney.
84. plantaginea, Lam.; 84. *latifolia*, Schk.
89. *plantaginea*, Lam.; 89. laxiflora, var. plantaginea, Boott.
86. platyphylla, Carey; (no syn.)
5. polytrichoides, Muhl.; 5. *leptalea*, Wahl. 5. *microstachya*, Mich.
15 *polymorpha*, Schw.; 15. vulpinoidea, Michx.
119. *polymorpha*, Muhl. (in part); 119. panicea, L. var. scariosa, Olney.
120. *polymorpha*, ed. 1; 120. striata, Michx. (not of ed 1.)
13. *praireа*, Dew; 13. teretiusula, var. major, Koch.
99. præcox, Jacq.; 99. *verna*, Villars, Dew., not of Schk.
102. *prasina*, Wahl.; 102. miliacea. Muhl.
126. *Pseudo-Cyperus*, Schw. and Torr., Dew, etc. in part, not L.; 126. comosa, Boott.
127. Pseudo-Cyperus, L.; (no syn.)
101. pubescens, Muhl.: (no syn.)

150. pulla, Good. ? ; { 150. *saxatilis*, L. (in part.) / 150. *rigida*.
150. pulla, var. ? miliaris, Gray ; 150. *miliaris*, Michx.
65. *pyriformis*, Schw. ; 65. aurea, Nutt.

59. rariflora, Smith; (no syn.)
26. *retroflexa*, Muhl. ; 26. rosea, Schk. var. Olney.
87. retrocurva, Dew ; (no syn.)
139. retrorsa, Schw. ; 139. *reversa*, Spreng.
139. retrorsa, var. Hartii, Gray ; 139. *Hartii*, Dew.
139. *reversa*, Spreng. ; 139. retrorsa, Schw.
57. *recurva*, Huds. (Gr. ed. 1.50); 57. littoralis, Schw.
31. *Richardii*, Michx. ; 31. canescens, L. (in part.)
46. rigida, Good. ; { 46. *nigra*, Schw. and Torr., not All. (Gr. ed. 1. 42) / 46. *saxatilis*, Fl. Dan., partly of L.
46. rigida, var.? Bigelovii, Gr. ; { 46. *Bigelovii*, Torr. / 46. *Washingtonia*, Dew.
150. *rigida*, L. (in part) ; 150. pulla, Good ?
100. Richardsonii, R. Br. ; (no syn.)
122. riparia, Curtis ; 122. *lacustris*, Willd. and former ed.
25. rosea, Schk. ; 25. *disperma*, Kunze (not Dew), (Gr. ed. 1. 25).
25. rosea, var. minor, Boott ; (no syn.)
2. rosea, var. radiata, Dew ; 25. *neglecta*, Tuckerm.
26. rosea, var. Olney; { 26. *rosea*, var. *retroflexa*, Torr. Cyp. / 26. *retroflexa*, Muhl.
26. *rosea*, var. *retroflexa*, Torr. Cyp. ; 26. rosea, var. Olney.
129. *rostrata*, Muhl., not Michx. ; 129. tentaculata, Muhl.
135. rostrata, Michx. ; (no syn.)
149. *rotundata*, Wahl. ? ; 149. miliaris, Michx. var. ? Olney.

12. *Sartwellii*, Dew, and former editions ; 12. disticha, Hudson.
46. *saxitilis*, Fl. Dan., partly L. ; 46. rigida, Good.
53. salina, Wahl. ; (no syn.)
90. *Sartwelliana*, Gay ; 90. oligocarpa, Schk.
150. *saxatilis*, L. ; 150. pulla, Good. ?
2. scirpoidea, Michx. ; { 2. *Wormskioldiana*, Hornem. / 2. *Michauxii*, Schw.
36. *scirpoides*, Schk. ; 36. stellulata, L. var. scirpoides, Gr.
39. scoparia, Schk. ; (no syn.)
39. scoparia, var. minor, Boott ; (no syn.)
103. scabrata, Schw. (no syn.)
141. Schweinitzii, Dew ; (no syn.)
64. Shortiana, Dew ; (no syn.)
138. *Shortii*, Steud., not Torr. ; 138. stenolepis, Torr.
11. siccata, Dew ; 11. *pallida*, C. A. Meyer.
16. *siccæformis*, Boott ; 16. Nuttallii, Schw.
43[a]. silicea, Olney ; { 43[a]. *fœnea*, var.? *sabulonum*, Boott. / 43[a]. *adusta*, former ed. not Boott.

21. sparganioides, Muhl. ;	21. *cephalophora*, var., Torr. 21. *muricata*, var. *cephaloidea*, Dew.
21. sparganioides, var. minor, Boott;	21. *cephaloidea*, Dew, (in part). 21. *divulsa*, Pursh, not Good. (prob)
31ª. *sphærostachya*, Dew ;	31ª. vitilis, Fries.
67. *sparsiflora*, Fries ;	67. panicea, L., var. refracta, Olney.
151. *Sprengelii*, Dew ;	151. longirostris, Torr.
137. squarrosa, L. ;	137. *typhina*, Michx.
8. Steudelii, Kunth ;	8. *Jamesii*, Schw.
17. stipata, Muhl. ;	17. *vulpinoidea*, Torr. Cyp., not Michx.
35 sterilis, Willd. ;	35. *stellulata*, var. *sterilis*, form. ed.
35. *stellulata*, var. *sterilis*, former ed. :	35. sterilis, Willd.
36. stellulata, L. ;	(no syn.)
36. stellulata, var. scirpoides, Gr. :	36. *scirpoides*, Schk.
36. stellulata, var. angustata, Gr. ;	(no syn.)
44. straminea, Schk. ;	(no syn.)
44. straminea, var. typica, Boott ;	(no syn.)
44. straminea, var. festucacea, Boott ;	44. *festucacea*, Schk. and form. ed.
44. straminea, var. Crawei, Boott ;	44. *straminea*, var. *hyaline*, Boott. 44. *hyalina*, Boott.
44. straminea, var. Meadii, Boott. ;	(no syn.)
44½. *straminea*, var. *aperta*, Boott ;	44ª. tenera, Dew. var. major, Olney.
44ª. *straminea*, var. *tenera*, Boott ;	44ª. tenera, Dew.
44. *straminea*, var. *hyalina*, Boott :	44. straminea, var. Crawei, Boott.
51. stricta, Lam. (not Good.) ;	51. *acuta*, Muhl. etc., not L. 51. *Virginiana*, Smith, in Rees' Cyclo. 51. *acuta*, var. *erecta*, Dew. 51. *angustata*, Boott. 51. *xerocarpa*, S. H. Wright, in Dew. Cat. (prob.)
51. stricta, var. strictior, Gr. ;	51. *strictior*, Dew.
51. *strictior*, Dew :	51. stricta, var. strictior, Gray.
89. *styloflexa*, Dew ;	89. laxiflora, Lam. var. styloflexa, Boott.
89. *striatula*, Michx. ;	89. laxiflora. Lam.
119. *striata*, Torr., Fl. N. Y., not Michx. :	119. panicea, L. var. scariosa, Olney.
120. striata, Michx. (not ed. 1.),	120. *polymorpha*, ed. 1.
125. *striata*, ed. 1, not Michx. ;	125. trichocarpa, Muhl.
138. stenolepis, Torr. ;	138. *Frankii*, Kunth. 138. *Shortii*, Steud., not Torr.
104. Sullivantii, Boott :	(no syn.)
136. subulata, Michx. :	136. *Collinsii*, Nutt. 136. *Michauxii*, Dew.
37. sychnocephala, Carey ;	37. *cyperoides*, Dew, not L.
106. *sylvatica*, Dew, not Hudson ;	106. arctata, Boott.

13. teretiuscula, Good.; { 13. *paniculata*, var. *teretiuscula*, Wahl. / 13. *paniculata*, var. *minor*, (Gr. ed. 1.14.)
13. teretiuscula, var. major, Koch.; { 13. *Ehrhartiana*, Hoppe. / 13. *prairiea*, Dew.
28. tenella, Schk.; { 28. *loliacea*, Schk., suppl., not L. / 28. *disperma*, Dew. / 28. *gracilis*, ed. 1., not Ehrh.
30. tenuiflora, Wahl.; (no syn.)
31. *tenella*, Ehrh.; 31. vitilis, Fries.
44ª. tenera, Dew; { 44ª. *straminea*, var. *tenera*, Boott. / 44ª. *festucacea*, var. *tenera*, former ed. (in part).
44ª. tenera, var. major, Olney.; 44ª. *straminea*, var. *aperta*, Boott.
75. *tetanica*, Schw. and Torr., not Schk.; 75. conoidea, Schk.
70. *tetanica*, Schk.; 70. panicea, L. var. tetanica, Olney.
108. *tenuis*, Rudge; 108. debilis, Michx.
129. tentaculata, Muhl.; 129. *rostrata*, Muhl., not Michx.
129. tentaculata, var. gracilis, Boott; (no syn.)
129. tentaculata, var. alatior, Boott; (no syn.)
49. torta, Boott; 49. *acuta*, var. *sparsiflora*, Dew?
73. Torreyi, Tuckerman; 73. *abbreviata*, Schw., Boott.
78. *Torreyana*, Dew., 78. Davisii, Schw. and Torr.
29. trisperma, Dew.; (no syn.)
83. triceps, Michx.; { 83. *hirsuta*, Willd. / 83. *viridula*, Schw. and Torr., not Michx. / 83. *hirsuta*, var. *pedunculata*, Schw. and Torr.
125. trichocarpa, Muhl.; 125. *striata*, ed. 1, not Michx.
125. trichocarpa, var. inberbis, Gray; (no syn.)
146. Tuckermani, Boott; { 146. *bullata*, of authors, not Schk. / 146. *cylindrica*, former edition.
137. *typhina*, Michx.; 137. squarrosa, L.

74. *undulata*, Kunze.; 74. pallescens, L. var. undulata, Gray.
94. umbellata, Schk.; (no syn.)
142. utriculata, Boott; 142. *ampullacea*, var. *utriculata*, former ed.

63. *Vahlii*, Schk.; 63. alpina. Swartz.
67. *vaginata*, Tausch.; 67. panicea, var. refracta, Olney.
88. *Vanvleckii*, Schw.; 88. digitalis, Willd.
98. varia, Muhl.; 98. *Pennsylvanica*, var. *Muhlenbergii*, Gray, Gram and Cyp.
143. Vaseyi, Dew. { 143. *monile*, Dew, in 1845, not Tuckerman. / 143. *vesicaria*, var. *cylindracea*, Dew.
99. *verna*, Villars, Dew, not Schk.: 99 præcox, Jacq.
118. vestita, Willd.; (no syn.)
143. *vesicaria*, var. *cylindracea*, Dew; 143. Vaseyi, Dew.
144. *vesicaria*, var. *alpigena*, Fries; 144 monile, Tuckerman.

31ª. vitilis, Fries; { 31ª. *canescens*, L. var. *vitilis*, Gray. / 31ª. *canescens*, var. *alpicola*, ed. 1. / 31ª. *canescens*, var. *sphærostachya*, ed. 1. / 31ª. *tenella*, Ehrh. / 31ª. *Persoonii*, Sieber. / 31ª. *Gebhardi*, Hoppe. / 31ª. *sphærostachya*, Dew. / 31ª. *Buckleyi*, Dew.

51. *Virginiana*, Smith, in Rees' Cyclo.; 51. stricta, Lam. (not of Good.)

82. virescens, Muhl.; 82. *costata*, Schw.

81. virescens, var. æstivalis, Olney; 81. *æstivalis*, M. A. Curtis.

83. *viridula*, Schw. and Torr., not Michx.; 83. triceps, Michx.

115. viridula, Michx.; { 115. *Œderi*, Ehrh. / 115. *irregularis*, Schw.

47. vulgaris, Fries; { 47. *acuta*, var. *vulgaris*, L. / 47. *cæspitosa*, of authors.

18. *vulpina*, former editions; 18 conjuncta, Boott.

15. vulpinoidea, Michx.; { 15. *bracteosa*, Schw. / 15. *multiflora*, Muhl. / 15. *microsperma*, Wahl. / 15. *polymorpha*, Schw. / 15. *setacea*, Dew.

17. *vulpinoidea*, Torr. Cyp., not Michx.; 17. stipata, Muhl.

46. *Washingtonia*, Dew.; 46. rigida, Good. var.? Bigelovii, Gray.

7. Willdenovii, Schk.; (no syn.)

2. *Wormskioldiana*, Hornem.; 2. scirpoidea, Michx.

70. *Woodii*, Dew.; 70. panicea, var. tetanica, Olney.

77. *xanthosperma*, Dew.; 77. flaccosperma, Dew.

134. *xanthophysa*, Wahl.; 134. folliculata, L.

51. xerocarpa, S. H. Wright, in Dew. Cat., 51. stricta, var. strictior, Gray.

FLORA OF INDIANA.

SUPPLEMENT I, APRIL, 1882.

[The following species have been reported since issuing the Catalogue of Indiana Plants, mostly by Mr. E. J. Hill, of Englewood, Ill.]

Cabomba Caroliniana, Gray. Bottoms of the Lower Wabash in Gibson and Posey.

Arabis Canadensis, L. Lake.

Draba Caroliniana, Walt. Lake.

Lechea thymifolia, Pursh. Lake.

minor, Walt., var. **stricta**. Lake.

Arenaria lateriflora, L. Lake.

Potentilla Anserina, L. Lake.

Heuchera hispida, Pursh. Lake.

Hippuris vulgaris, L. Otis, Laporte Co.

Archangelica atropurpurea, Hoffman. Lake. Porter.

Aralia hispida, Ventenat. Lake.

Sambucus pubens, Michx. Otis, Laporte Co.

Viburnum Opulus, L. Lake.

Solidago Virga-aurea, L., var. **humilis**. Lake.

Cnicus Pitcheri, T. & G. (*Cirsium Pitcheri.*) Lake.

Gentiana Saponaria, L. Lake. Laporte.

Bartonia tenella, Muhl. Lake.

Melampyrum Americanum, Michx. Lake.

Utricularia gibba, L. Lake.

purpurea, Walt. Lake.

cornuta, Michx. Lake.

Calamintha Nuttallii, Benth. (*C. glabella*, var. *Nuttallii*, Gray.) Lake.

MYRICACEÆ.

Comptonia asplenifolia, Ait. Lake.

Salix glaucophylla, Bebb. Lake.

adenophylla, Hook. Lake.

Potamogeton gramineus, L., var. **heterophyllus**. Lake.

Habenaria Hookeri, Torr., var. **oblongifolia**, Paine. Lake.

Juncus Balticus, Dethard. Lake.

alpinus, Villars, var. **insignis**, Fries. Lake.

Cyperus Engelmanni, Steud. Lake.

Fimbristylis spadicea, Vahl., var. **castanea**, Gr. Lake.

Carex bromoides, Schk. Otis, Laporte Co.
teretiuscula, Good. Lake.
Buxbaumii, Wahl. Jefferson. Lake.
plantaginea, Lam. Jefferson. Laporte.
Careyana, Torr. Otis, Laporte Co.
riparia, Curtis, Lake.
Calamagrostis arenaria, Roth. Lake.
Aristida tuberculosa, Nutt. Lake.
Panicum pauciflorum, Ell. Lake.
Equisetum limosum, L. Lake.
Phegopteris Dryopteris, Fee. Allen. (*J. A. Sanford.*)
Lycopodium inundatum, L. Lake.
(Species now catalogued, 1475; genera, 583.)

(The following species, already enumerated, must have the counties indicated added to their range.)

Viola rostrata, Muhl. Otis, Laporte Co.
Lechea major, Michx. Lake.
Hypericum Canadense, L., var. **major**. Lake.
Hibiscus Moscheutos, L. Swamps and borders of ponds, Knox. (*Robt. Ridgway.*)
militaris, Cav. With the last.
Acer saccharinum, var. **nigrum**, T. & G. The prevailing form in Gibson and Posey. (*R. Ridgway.*)
Negundo aceroides, Mœnch. Very abundant in Gibson.
Amorpha fruticosa, L. Knox, abundant in Cypress swamps. (*R. Ridgway.*)
Gymnocladus Canadensis, Lam. Otis, Laporte Co.
Gleditschia triacanthos, L. "I have seen this tree, in parts of the White River bottoms (Gibson county) the prevailing tree, over an area of perhaps several hundred acres; the trees of very large size some 100 feet high and many 3 to 5 feet in diameter" (*R Ridgway.*)
monosperma, Walt. Common in the Cypress swamps of Knox. (*R. Ridgway.*)
Parnassia Carolinana, Michx. Lake.
Saxifraga Pennsylvanica, L. Lake.
Nesæa verticillata, HBK. Laporte.
Aralia racemosa, L. Lake.
Vernonia Noveboracensis, Willd. Lake.
Liatris scariosa, Willd. Lake.
Solidago stricta, Ait. Lake.
bicolor, L. Allen.
Coreopsis trichosperma, Michx. Lake.
Asclepias obtusifolia, Michx. Tippecanoe.
Gentiana alba, Muhl. Lake.

Frasera Carolinensis, Walt. Tippecanoe.
Habenaria viridis, var. **bracteata**, Reich. Lake.
Goodyera pubescens, R. Br. Lake.
Juncus nodosus, L. Lake.
" var. **megacephalus**, Torr. Lake.
Xyris flexuosa, Muhl. Lake.
Cyperus inflexus, Muhl. Allen.
Carex granularis, Muhl. Lake.
gracillima, Schw. Lake.
virescens, Muhl. Porter.
laxiflora, var. **latifolia**, Boott. Otis, Laporte Co.
comosa, Boott. Lake.
lupulina, Muhl. Porter. Laporte.
stenolepis, Torr. Marion.
Sporobolus heterolepis, Gray. Lake.

CORRECTIONS.

Page 1. **Ranunculus alismæfolius** should read **R. ambigens** Watson.
32. **Juncus scirpoides**, var. **macrostemon**, should be credited to Lake instead of "Laporte."
33. **Hemicarpha subsquarrosa** is correctly credited to Laporte but the var. **Drummondii** should be credited to Lake.